

2103 Lecture Notes  
**Galileo**  
SBM, pp. 53-86 and Letter to Christina

**Transitional Figure (b. 1564-d1642)**

- Contemporary with Shakespeare, Kepler, others
- Defended Copernican system and observational methods
- Developed mathematical (and idealized) descriptions of phenomena
- Church Reaction: 1616 warning, 1633 condemnation
- Timeline (3 Periods)
  - 1588-1592 University of Pisa Mathematics
  - 1592-1610 University of Padua Mathematics and Physics
  - 1610-1642 Florence “Chief Mathematician and Philosopher”
- To overcome Aristotelean astronomy (heaven v. earth), teleology, and method, Galileo saw he needed more than mere observation; he needed a new physics, a new philosophy, and a new theology.

**Starry Messenger (1610)**

- Use of Telescope to view moon, stars, planets... New observations contra Aristotelean and Church worldview. Suggests heaven and earth not so different.
- Geography of the Moon
- Motion of Jupiter Milkyway (made of stars!)
- Phases of Venus
- Sunspots
- Fixed Stars (no bigger through telescope)

**Assayer (1623)**

- Primary and Secondary Qualities
- Relativity of Perception

**Two Chief World Systems (1632)**

- Heaven and Earth
- Authority: ridicules appeals to scriptural authority in things scientific
- Motion of Earth and objections to Copernicanism

**Two New Sciences (1638)**

- Experiment and Idealization
- Mathematical representation of phenomena

## **Letter to Christina (1614?)**

- Charges
  - Copernican system contradicts scripture (heresy)
  - Specific passages (e.g., Joshua 10:12-13)
- Scriptural Interpretation
  - Scripture is True
  - Many different interpretations and disagreements
  - Method of interpretation important: literal vs. metaphorical
  - Written by inspiration
- Scripture and Science
  - Salvation vs. Natural phenomena (astronomy, motion, etc.)
  - Galileo's common sense dialectic (literal interpretation doesn't work)
- Joshua 10:12-13
  - Sun stood still
  - Copernican system better at interpreting passage
  - Literal interpretation not so obvious